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EXAMINER

VO, TUNG T

ART UNIT

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2613

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Please find below and/or attached an Office communication concerning this application or proceeding.

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# Office Action Summary

Application No.

09/274,152

Applicant(s)

MCVEIGH ET AL.

Examiner

Tung T. Vo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 12/02/03.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-31 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 20, 21.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

2. Claims 1-31 are rejected under 35 U.S.C. 102(b) as being anticipated by Igarashi et al. (US 5,666,461) as set forth in the previous Office Action, No. 18.

Re claim 12, Igarashi teaches an apparatus for encoding and decoding a video stream as shown in figures 3-8, which comprises all limitations as set forth in the previous Office Action, Paper No. 18. Igarashi further teaches various types of motion vectors used in the encoding and decoding apparatus field based motion prediction, wherein the vector FMVeBe indicates prediction from an even field of a reference picture to an even field of a B picture, which means the utilizing even-parity field prediction to predict content of each of plurality of fields of the predicted frame from corresponding fields (col. 9, lines 39-42).

3. Claims 1, 18, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Murakami et al. (US 5,274,442) as set forth in the previous Office Action, Paper No. 18.

Re claims 1, 18, and 20, Murakami teaches all limitations as set forth in the previous Office Action, paper No. 18, and further suggests a motion detecting circuit (22

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of fig. 7) for predicting content of an even-field of predicted frame from an even-field of the anchor picture as the reference picture (col. 11, lines 34-36).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Iu (US 5,293,229) in view of Eifrig et al. (US 5,991,447).

Re claims 12-15, Iu discloses an apparatus (fig. 1) comprising a motion estimation circuit (32) to receive a stream of data (22, 28, 30) comprising at least an anchor frame (col. 8, lines 63) and predicted frame (P), and to utilize even-parity field prediction, odd and even fields (figs. 2 and 3) to predict content of each of a plurality of fields of the predicted frame from corresponding fields of the anchor frame, where the anchor frames, I0 and I1, are used to predict the even field of the next anchor frame, P6. To predict the odd field, P7, of the next anchor frame however, I1 and P6 are used not I0 and I1;

wherein the anchor frame used either precedes or supersedes the predicted frame depending on predicted frame type (col. 8, lines 13);

wherein the motion estimation circuit measures activity content within each of the plurality of fields of the anchor frame to generate a corresponding plurality of motion vectors (col. 8, lines 18-21);

wherein the motion estimation circuit predicts content of a first in the predicted frame from content of a corresponding first field in the anchor frame and a first field

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motion vectors, and predicts content of a second field in the predicted frame from a corresponding second field and a second field motion vector (col. 8, lines 58-65);

wherein motion estimation circuit (32) generates a motion vector for each a first and second field of the predicted frame by measuring a sum of absolute activity differences (col. 8, lines 13) in a corresponding first and second field of the anchor frame.

Iu further teaches the event I and P fields are used as an anchor to predict an individual even predictive field, which means that the utilizing even-parity field prediction to predict content of each of a plurality of fields of the predicted frame from corresponding fields of the anchor frame (col. 8, lines 32-33).

Re claims 1 and 4, Iu rejects the method claims 1 and 4 for the same reasons as disclosed in claims 12-15.

Re claims 2, 3, 5-11, and 16, Iu discloses the prediction of the odd and even fields (figs. 2, 3, and 4) to predict content of each of a plurality of fields of the predicted frame from corresponding fields of the anchor frame, where the anchor frames, I0 and I1, are used to predict the even field of the next anchor frame, P6. To predict the odd field, P7, of the next anchor frame however, I1 and P6 are used not I0 and I1.

It is noted that Iu fails to particularly disclose wherein the predicted frame and anchor frame comprises interlaced video content, wherein a first field of each of the predicted frame and the anchor frame contain even-field interlaced video content, while a second field of each of the predicted frame and the anchor frame contain odd-field interlaced video content as specified in claims 6-11, and 16, and scaled motion vectors of the fields by a dynamically determined motion vector as specified in claims 2.

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However, Eifreig teaches a method and apparatus for coding of the odd and even fields of an interlaced-coded as shown in figs. 2, wherein the motion estimation (220 of fig. 2) estimating vectors of the fields, wherein the predicted frame and anchor frame are comprised of interlaced video content, wherein a first field of each of the predicted frame and the anchor frame contain even-field interlaced video content, while a second field of each of the predicted frame and the anchor frame contain odd-field interlaced video content (cols. 7 and 8; figs. 5 and 6), where forward and backward motion vectors are determined by predicting the fields of the current image by scaling the forward motion vector of corresponding field of the future image (col. 2).

Taking the teachings of Iu and Eifreig together as a whole, it would have been obvious to one of ordinary skill in the art to modify the teachings of the predicted frame and anchor frame are comprised of interlaced video content of Eifreig into the motion estimation circuit of Iu for the same purpose of performing the fields prediction to obtain interlaced video content as claimed. Doing so would allow reducing a prediction time and producing a residue signal that can be encoded in fewer bits than the prediction of the predicted frame based on I0 and I1.

Re claims 18 and 19, the combination of Iu and Eifrig further teaches a storage medium comprising a plurality of executable instructions causes a executing processor to implement a motion estimation function as taught by Iu (21, 24, 32, 36, 48 of fig. 1) and (200 of fig. 2).

Re claims 20-31, see analysis in claims 1-19.

*Response to Arguments*

6. Applicant's arguments filed 12/02/02 have been fully considered but they are not persuasive.

The applicant argued that Igarashi teaches away from the applicant's claim, which feature of utilizing even-parity field prediction to predict content of each of a plurality of fields of the predicted frame from corresponding fields of the anchor frame, pages 9 and 10.

The examiner respectfully disagrees with the applicant. It is submitted that Igarashi teaches utilizing even-parity field prediction to predict content of each of a plurality of fields of the predicted frame from corresponding fields of the anchor frame (col. 9, lines 39-42, e.g. the various types of motion vectors used in the encoding and decoding apparatus wherein the vector FMVeBe indicates prediction from an even field of a reference picture to an even field of a B picture). Therefore, Igarashi anticipates the claimed features.

The applicant further argued that fails to anticipates the claimed invention, utilizing even-parity field prediction to predict content of each of a plurality of fields of the predicted frame from corresponding fields of the anchor frame, pages 11-13.

The examiner respectfully disagrees with the applicant. It is submitted that Murakami teaches utilizing even-parity field prediction to predict content of each of a plurality of fields of the predicted frame from corresponding fields of the anchor frame (col. 11, lines 34-36, e.g. the even field G1 of the preceding frame stored in the even

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memory is provided to the motion compensation prediction signal, this means the even-parity is used for prediction). Therefore, Murakami anticipates the claimed features.

It is acknowledge that Igarashi or Murakami does not describe a system identical to that disclosed by the applicant (the claimed invention). However, claims are to be given their broadest reasonable interpretation during examination, and the scope of a claim cannot be narrowed by reading disclosed limitation into the claim. See In re Morris, 127 F.3d 1048, 1054, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997); In re Zletz, 893 F.2d 319, 321, 13 USPQ2d 1320, 1322 (Fed. Cir. 1989); In re Prater, 415 F.2d 1393, 1404, 162 USPQ 541, 550 (CCPA 1969). In addition, the law of anticipation does not require that a reference "teach" what an applicant's disclosure teaches. Assuming that a reference is properly "prior art", it is only necessary that the claims "read on" something disclosed in the reference, i. e., all limitations of the claim are found in the reference, or "fully met" by it. Kalman v. Kimberly-Clark Corp., 713 F.2d 760, 772, 218 USPQ 781, 789 (Fed. Cir. 1983).

The applicant further argued that the Iu reference actually teaches away from that which is claimed in rejected claims 1-31 and cannot reasonably be interpreted rendering obvious such claims, pages 14-15.

The examiner respectfully disagrees with the applicant. It is submitted that Iu further teaches the event I and P fields are used as an anchor to predict an individual even predictive field, which means that the utilizing even-parity field prediction to predict content of each of a plurality of fields of the predicted frame from corresponding fields of the anchor frame (col. 8, lines 32-33). Iu further suggests that the even parity fields are used to predict the motion vectors for encoding and decoding, so the claimed invention is



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unpatentable over the Iu. Moreover, Eifrig teaches an apparatus and its method for coding of the odd and even fields of an interlaced-coded as shown in figs. 2, wherein the motion estimation (220 of fig. 2) estimating vectors of the fields, wherein the predicted frame and anchor frame are comprised of interlaced video content, wherein a first field of each of the predicted frame and the anchor frame contain even-field interlaced video content, while a second field of each of the predicted frame and the anchor frame contain odd-field interlaced video content (cols. 7 and 8; figs. 5 and 6), where forward and backward motion vectors are determined by predicting the fields of the current image by scaling the forward motion vector of corresponding field of the future image (col. 2). Since Iu and Eifrig are in the same environment of encoding, so they are combinable to make the claimed invention obvious.

In further response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, see the above.

#### ***Conclusion***

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tung T. Vo whose telephone number is (703) 308-5874. The examiner can normally be reached on 6:30 AM - 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chris. Kelley can be reached on (703) 305-4856. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

T.Vo  
August 12, 2003

  
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